



ServeRAID M5016 SAS/SATA Controller

IBM Redbooks Product Guide

The ServeRAID M5016 SAS/SATA Controller offers an enterprise grade RAID solution for internal HDDs and integrates popular 6 Gbps SAS technology into an organization's storage infrastructure. In addition, M5016 comes with Flash-Backed cache offload, allowing clients to have extended-life cached data protection in their storage subsystem in the event of an unexpected power outage.

Figure 1 shows the ServeRAID M5016 controller.

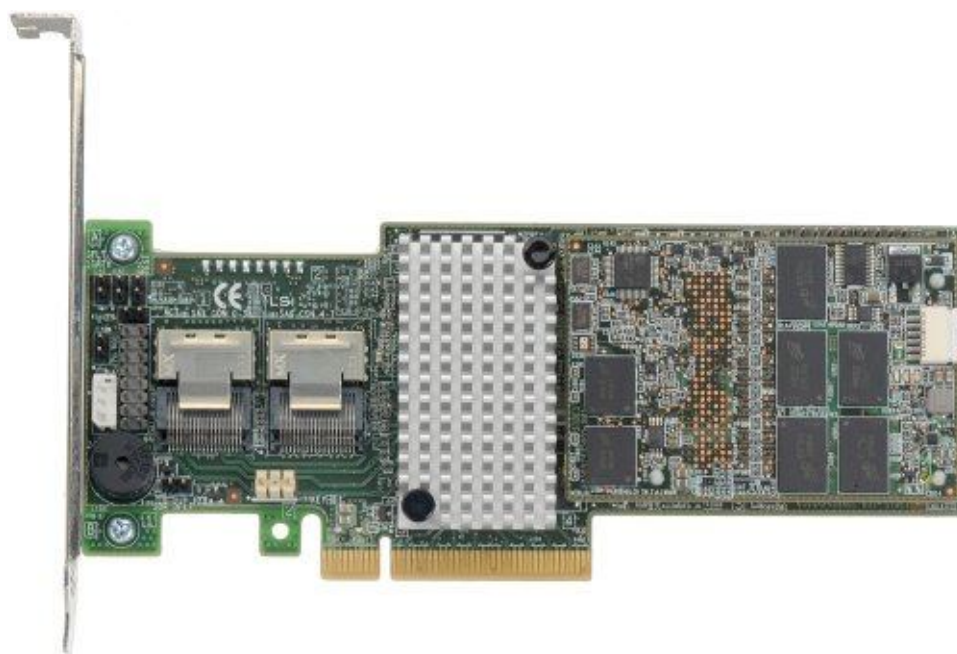


Figure 1. ServeRAID M5016 SAS/SATA Controller (with flash module)

Did you know

The ServeRAID M5016 SAS/SATA Controller uses 1 GB of Flash-Backed cache with super-capacitor technology, eliminating the need for consumable batteries. In addition, it supports RAID 6 and 60, and self-encrypting drives as a standard feature. The purchase of additional feature keys is not required.

Part number information

Table 1 provides the ordering part number and feature code.

Table 1. Ordering part number and feature code

Description	Part number	Feature code
ServeRAID M5016 SAS/SATA Controller for IBM System x	90Y4304	A2NF
ServeRAID M5016 Battery Tray	88Y5874	A39V

The ServeRAID M5016 option part number includes the following items:

- One ServeRAID M5016 adapter card
- Full-height (3U) bracket
- Low-profile (2U) bracket
- Cache module
- Power module
- Two power module cables
- Cable clip
- Quick installation guide
- Warranty flyer
- Documentation CD
- Important notices flyer

The ServeRAID M5016 Battery Tray option part number includes the following items:

- Battery tray for mounting up to two power modules
- Important notices flyer
- Installation and warranty information

The ServeRAID M5016 Battery Tray option is required when M5016 controller is installed in IBM System x3690 X5 (7147) or x3850 X5/x3950 X5 (7143) servers. With one or two M5016 controllers installed in any of these systems, only one battery tray option is required. With three or four M5016 controllers installed in x3690 X5 (x3850 X5 supports up to two M5016 controllers), two battery tray options are required.

Figure 2 shows ServeRAID M5016 adapter with cache and power modules and power cables.

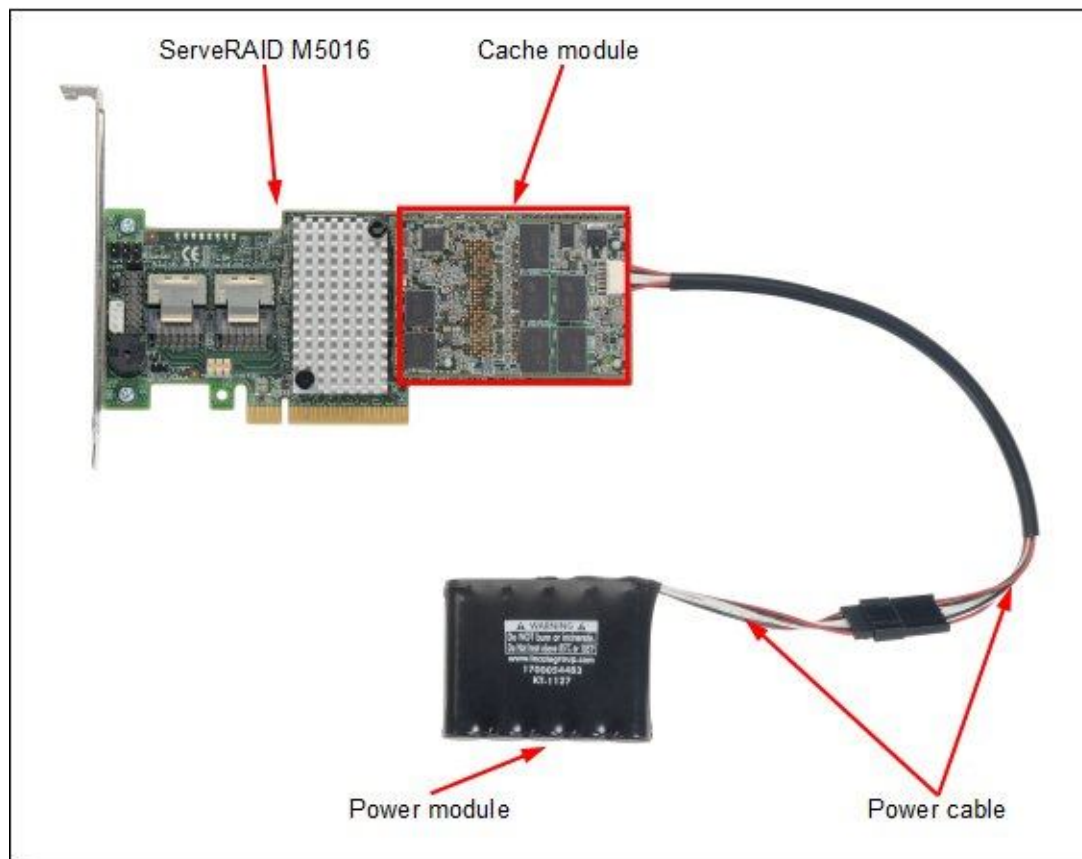


Figure 2. ServeRAID M5016 adapter with cache and power modules and power cables

Specifications

The ServeRAID M5016 adapter card has the following specifications:

- Eight internal 6 Gbps SAS/SATA ports
- Two Mini-SAS internal connectors (SFF-8087)
- 6 Gbps throughput per port
- 800 MHz dual-core PowerPC® processor with LSI SAS2208 6 Gbps RAID on Chip (ROC) controller
- PCI Express x8 Gen 2 host interface
- 1 GB of onboard data cache (DDR3 running at 1333 MHz)
- CacheVault technology to protect data in cache in case of critical power or server failure
- Supports RAID levels 0, 1, 5, 6, 10, 50, and 60
- Connects to up to 128 SAS or SATA drives
- Intermix of SAS and SATA drives are supported, but the mixing of SAS and SATA drives in the same RAID array is not supported
- Supports up to 64 logical volumes

- Supports LUN sizes up to 64 TB
- Configurable stripe size up to 1 MB
- Compliant with Disk Data Format (DDF) configuration on disk (COD)
- S.M.A.R.T. support

Features

The ServeRAID M5016 SAS/SATA Controller has the following features:

- Auto-resume on array rebuild or array reconstruction after loss of system power
Auto-resume uses non-volatile NVRAM to save rebuild progress during a host reboot or power failure to automatically resume from the last checkpoint. Auto-resume ensures that data integrity is maintained through the process. The card supports a number of features that are able to be implemented without rebooting the server. Applications such as email and web server benefit from avoiding downtime during transition.
- Online Capacity Expansion
Online Capacity Expansion (OCE) allows the capacity of a virtual disk to be expanded by adding new physical disks or making use of unused space on existing disks, without requiring a reboot.
- Online RAID Level Migration
Online RAID Level Migration (also known as logical drive migration) provides the ability to migrate a virtual disk from any RAID level to any other RAID level without requiring a reboot. System availability and application functionality remain unaffected.
- Fast initialization for quick array setup
- Consistency check for background data integrity
Consistency check verifies that all stripes in a virtual disk with a redundant RAID level are consistent. The consistency check will mirror data when an inconsistent stripe is detected for a RAID 1 and recreate the parity from the peer disks in the case of a RAID 5 or RAID 6. Consistency checks can be scheduled to take place periodically.
- Extensive online configuration options: Advanced monitoring and event notification
Management tools provide convenience for configuration of logical volumes and alerting when errors have occurred or are about to occur.
- Patrol read for media scanning and repairing
Patrol read is a background sentry service designed to proactively discover and correct media defects (bad sectors) that arise normally as a disk drive ages. The service issues a series of verify commands, and if a bad block is discovered, the card's firmware uses RAID algorithms to recreate the missing data and remap the sector to a good sector. The task is interruptible based on controller activity and host operations. The firmware also provides an interface where the patrol read task can be initiated, set up for continuous operation, and terminated from a management application. Patrol read can be activated by manual command or automatically.
- Global and dedicated Hot Spare with Revertible Hot Spare support
A hot spare rebuilds data from all virtual disks within the disk group in which it is configured. ServeRAID provides the ability to define a physical disk as a hot spare to replace a failed drive. Hot spares can be configured as either global or dedicated. A global hot spare allows any physical drive to be designated as a hot spare. A dedicated hot spare allows the user to assign a hot spare drive to a particular array of the same drive type.

- Support for RAID levels 6 and 60 and self-encrypting drives as a standard feature (no additional feature keys required)
- LSI SafeStore support for self-encrypting drive services

LSI SafeStore encryption services offer instant secure erase and local key management for self-encrypting drives. This technology represents a significant step forward in securing data on a disk drive from any unauthorized access or modification resulting from theft, loss, or repurposing of drives. Instant secure erase permanently removes data when repurposing or decommissioning SEDs. SafeStore local key management provides the necessary management and protection of SEDs using a simple pass phrase, security key identifier, and security key file that can be set and applied to all SEDs assigned to a ServeRAID adapter. This removes the complexity of managing each SED's unique encryption key, and essentially relieves the administrator of most of the daily tasks of securing data.

- CacheVault flash cache protection

LSI CacheVault flash cache protection uses NAND flash memory powered by a supercapacitor to protect data stored in the controller cache. This module eliminates the need for a lithium-ion battery commonly used to protect DRAM cache memory on PCI RAID controllers. To avoid the possibility of data loss or corruption during a power or server failure, CacheVault technology transfers the contents of the DRAM cache to NAND flash (CacheVault flash module - CVFM) using power from the CacheVault power module (CVPM). After the power is restored to the M5016 RAID controller, CacheVault technology transfers the contents of the NAND flash back to the DRAM, which will eventually be flushed to disk.

Supported servers

The ServeRAID M5016 adapter card is supported on the IBM® System x® servers listed in Table 2.

Table 2. Supported System x servers

Product description	x3100 M4 (2582)	x3200 M3 (7327, 7328)	x3250 M3 (4251, 4252)	x3250 M4 (2583)	x3400 M3 (7378, 7379)	x3500 M3 (7380)	x3500 M4 (7383)	x3530 M4 (7160)	x3550 M3 (7944)	x3550 M4 (7914)	x3620 M3 (7376)	x3630 M3 (7377)	x3630 M4 (7158)	x3650 M3 (7945)	x3650 M4 (7915)	x3690 X5 (7147)	x3750 M4 (8722)	x3755 M3 (7164)	x3850 X5 (7143)	dx360 M3 (6391)	dx360 M4 (7912)
ServeRAID M5016 SAS/SATA Controller	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	N	Y†	N	N	Y†	N	N
ServeRAID M5016 Battery Tray	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y*	N	N	Y*	N	N

† Optional ServeRAID M5016 Battery Tray (part number 88Y5874) is required for ServeRAID M5016 support.

* One ServeRAID M5016 Battery Tray supports up to two ServeRAID M5016 controllers.

See IBM ServerProven® for the latest information about the System x servers that support each adapter:
<http://ibm.com/servers/eserver/serverproven/compat/us/>

Supported disk drives

The ServeRAID M5016 SAS/SATA controller supports the disk drives that are supported on the servers listed in Table 2. The maximum number of drives that can be connected to the RAID controller is limited by the number of internal drive bays for a supported server.

Supported 2.5-inch simple-swap hard disk drives and the servers with which they are supported are listed in the following table.

Table 3. Supported 2.5-inch simple-swap hard disk drives

Product description	Part number	x3550 M3 (7944)	x3650 M3 (7945)	x3690 X5 (7147)	x3850 X5 (7143)
2.5-inch SAS SS HDDs					
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2SS HDD	90Y8935	N	N	N	N
IBM 146GB 15K 6Gbps SAS 2.5" SFF SS HDD	49Y1996	N	N	N	N
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2SS HDD	90Y8895	N	N	N	N
IBM 300GB 10K 6Gbps SAS 2.5" SFF SS HDD	49Y1991	N	N	N	N
IBM 300GB 15K 6Gbps SAS 2.5" SFF SS HDD	81Y9674	N	N	N	N
IBM 600GB 10K 6Gbps SAS 2.5" SFF G2SS HDD	90Y8890	N	N	N	N
IBM 600GB 10K 6Gbps SAS 2.5" SFF SS HDD	49Y2027	N	N	N	N
IBM 900GB 10K 6Gbps SAS 2.5" SFF SS HDD	81Y9654	N	N	N	N
2.5-inch NL SATA SS HDDs					
IBM 250GB 7.2K 6Gbps NL SATA 2.5" SFF SS HDD	81Y9734	N	N	N	N
IBM 500GB 7.2K 6Gbps NL SATA 2.5" SFF SS HDD	81Y9738	N	N	N	N
IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF SS HDD	81Y9742	N	N	N	N

Supported 2.5-inch hot-swap hard disk drives and the servers with which they are supported are listed in the following table.

Table 4. Supported 2.5-inch hot-swap hard disk drives (part 1)

Product description	Part number	x3550 M3 (7944)	x3650 M3 (7945)	x3690 X5 (7147)	x3850 X5 (7143)
2.5-inch SAS HS HDDs					
IBM 73GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD	42D0672*	Y	Y	Y	Y
IBM 146GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	42D0632*	Y	Y	Y	Y
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2HS HDD	90Y8926	Y	Y	Y	Y
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2HS SED	90Y8944	Y	Y	Y	Y
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD	42D0677	Y	Y	Y	Y
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS SED	44W2294	Y	Y	Y	Y
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	90Y8877	Y	Y	Y	Y
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS SED	90Y8913	Y	Y	Y	Y
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	42D0637	Y	Y	Y	Y
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS SED	44W2264	Y	Y	Y	Y
IBM 300GB 15K 6Gbps SAS 2.5" SFF HS HDD	81Y9670	Y	Y	Y	Y
IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	90Y8872	Y	Y	Y	Y
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	49Y2003	Y	Y	Y	Y
IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS SED	90Y8908	Y	Y	Y	Y
IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD	81Y9650	Y	Y	Y	Y
IBM 900GB 10K 6Gbps SAS 2.5" SFF G2HS SED	81Y9662	Y	Y	Y	Y
2.5-inch NL SAS HS HDDs					
IBM 500GB 7.2K 6Gbps NL SAS 2.5" SFF G2HS HDD	90Y8953	Y	Y	Y	Y
IBM 500GB 7200 6Gbps NL SAS 2.5" SFF Slim-HS HDD	42D0707	Y	Y	Y	Y
IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD	81Y9690	Y	Y	Y	Y

Table 4. Supported 2.5-inch hot-swap hard disk drives (part 2)

Product description	Part number	x3550 M3 (7944)	x3650 M3 (7945)	x3690 X5 (7147)	x3850 X5 (7143)
2.5-inch NL SATA HS HDDs					
IBM 160GB 7200 NL SATA 2.5" SFF Slim-HS HDD	42D0747*	Y	Y	N	Y
IBM 250GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	81Y9722	Y	Y	Y	Y
IBM 500GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	81Y9726	Y	Y	Y	Y
IBM 500GB 7200 NL SATA 2.5" SFF Slim-HS HDD	42D0752*	Y	Y	N	Y
IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	81Y9730	Y	Y	Y	Y

* Withdrawn, not available for ordering.

Supported 3.5" simple-swap hard disk drives and the servers with which they are supported are listed in the following table.

Table 5. Supported 3.5" simple-swap hard disk drives

Product description	Part number	x3550 M3 (7944)	x3650 M3 (7945)	x3690 X5 (7147)	x3850 X5 (7143)
3.5-inch NL SATA SS HDDs					
250GB 3.5" Simple-Swap SATA II HDD	39M4508*	N	N	N	N
IBM 250GB 7.2K SATA 3.5" Simple-Swap HDD	43W7750*	N	N	N	N
500GB 3.5" Simple-Swap SATA II HDD	39M4514	N	N	N	N
IBM 500GB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	81Y9802	N	N	N	N
IBM 1TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	81Y9806	N	N	N	N
IBM 1TB 7.2K SATA 3.5" Simple-Swap HDD	43W7622	N	N	N	N
IBM 2TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	81Y9810	N	N	N	N
IBM 2TB 7200 NL SATA 3.5" SS HDD	42D0787	N	N	N	N
IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	81Y9814	N	N	N	N
IBM 3TB 7.2K 6Gbps NL SATA 3.5" SS HDD	81Y9778	N	N	N	N

* Withdrawn, not available for ordering.

Supported 3.5-inch hot-swap hard disk drives and the servers with which they are supported are listed in the following table.

Table 6. Supported 3.5-inch hot-swap hard disk drives

Product description	Part number	x3550 M3 (7944)	x3650 M3 (7945)	x3690 X5 (7147)	x3850 X5 (7143)
3.5-inch SAS HS HDDs					
IBM 300GB 15K 6Gbps SAS 3.5" G2HS HDD	49Y6092	N	N	N	N
IBM 450GB 15K 6Gbps SAS 3.5" G2HS HDD	49Y6097	N	N	N	N
IBM 600GB 15K 6Gbps SAS 3.5" G2HS HDD	49Y6102	N	N	N	N
IBM 300GB 15K 6Gbps SAS 3.5" Hot-Swap HDD	44W2234	N	N	N	N
IBM 450GB 15K 6Gbps SAS 3.5" Hot-Swap HDD	44W2239	N	N	N	N
IBM 600GB 15K 6Gbps SAS 3.5" Hot-Swap HDD	44W2244	N	N	N	N
3.5-inch NL SAS HS HDDs					
IBM 1TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	90Y8567	N	N	N	N
IBM 1TB 7.2K 6Gbps NL SAS 3.5" HS HDD	42D0777	N	N	N	N
IBM 2TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	90Y8572	N	N	N	N
IBM 2TB 7.2K 6Gbps NL SAS 3.5" HS HDD	42D0767	N	N	N	N
IBM 3TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD	90Y8577	N	N	N	N
IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD	81Y9758	N	N	N	N
3.5-inch NL SATA HS HDDs					
IBM 250GB 7.2K SATA 3.5" Hot-Swap HDD	43W7754*	N	N	N	N
250GB 3.5" Hot-Swap SATA II HDD	39M4526*	N	N	N	N
500GB 3.5" Hot-Swap SATA II HDD	39M4530	N	N	N	N
IBM 500GB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	81Y9786	N	N	N	N
IBM 1TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	81Y9790	N	N	N	N
IBM 2TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	81Y9794	N	N	N	N
IBM 2TB 7200 NL SATA 3.5" HS HDD	42D0782	N	N	N	N
IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	81Y9798	N	N	N	N
IBM 3TB 7.2K 6Gbps NL SATA 3.5" HS HDD	81Y9774	N	N	N	N

* Withdrawn, not available for ordering.

Supported solid-state drives (SSDs) and the servers with which they are supported are listed in the following table.

Table 7. Supported solid-state drives

Product description	Part number	x3550 M3 (7944)	x3650 M3 (7945)	x3690 X5 (7147)	x3850 X5 (7143)
2.5-inch SATA HS Enterprise SSDs					
IBM 50GB SATA 2.5" SFF Slim-HS High IOPS SSD	43W7714*	Y	Y	Y	Y
IBM 200GB SATA 2.5" MLC HS SSD	43W7718	Y	Y	Y	Y
2.5-inch SATA HS Enterprise Value SSDs					
IBM 64GB SATA 2.5-inch MLC HS Enterprise Value SSD	49Y5839	Y	Y	Y	Y
IBM 128GB SATA 2.5" MLC HS Enterprise Value SSD	90Y8648	Y	Y	Y	Y
IBM 256GB SATA 2.5" MLC HS Enterprise Value SSD	90Y8643	Y	Y	Y	Y
IBM 512GB SATA 2.5-inch MLC HS Enterprise Value SSD	49Y5844	Y	Y	Y	Y
2.5-inch SATA SS Enterprise SSDs					
IBM 200GB SATA 2.5" MLC SS SSD	43W7742	N	N	N	N
2.5-inch SATA SS Enterprise SSDs					
IBM 64GB SATA 2.5-inch MLC SS Enterprise Value SSD	49Y5849	Y	N	N	N
IBM 128GB SATA 2.5" MLC SS Enterprise Value SSD	90Y8668	Y	N	N	N
IBM 256GB SATA 2.5" MLC SS Enterprise Value SSD	90Y8663	Y	N	N	N
IBM 512GB SATA 2.5-inch MLC SS Enterprise Value SSD	49Y5854	Y	N	N	N
1.8-inch SATA Enterprise SSDs					
IBM 50GB SATA 1.8" MLC SSD	43W7726	N	N	Y	Y
IBM 50GB SATA 1.8" NHS SSD	43W7734*	N	N	Y	Y
IBM 200GB SATA 1.8" MLC SSD	43W7746	N	N	Y	Y
1.8-inch SATA Enterprise Value SSDs					
IBM 64GB SATA 1.8-inch MLC Enterprise Value SSD	49Y5834	N	N	Y	Y
IBM 512GB SATA 1.8-inch MLC Enterprise Value SSD	49Y5993	N	N	Y	Y

* Withdrawn, not available for ordering.

Warranty

There is a 1-year limited warranty. When installed on a System x server, these cards assume your system's base warranty and any IBM ServicePac® upgrade.

Physical specifications

The ServeRAID M5016 SAS/SATA controller has the following physical specifications:

- Height: 69 mm (2.7 in)
- Width: 167 mm (6.6 in)
- Depth: 13 mm (5.0 in)
- Weight: 90 g (0.2 lb)

These are the shipping dimensions:

- Height: 238.3 mm (9.4 in)
- Width: 143.0 mm (5.6 in)
- Depth: 50.8 mm (2.0 in)
- Weight: 222 g (0.5 lb)

Operating environment

The ServeRAID M5016 SAS/SATA controller is supported in the following environment:

- Temperature:
 - At 0 - 914 m (0 - 3,000 ft): 10 - 35 °C (50 - 95 °F)
 - At 914 - 2133 m (3,000 - 7,000 ft): 10 - 32 °C (50 - 90 °F)
- Relative humidity: 20 - 80% (non-condensing)
- Maximum altitude: 2,133 m (7,000 ft)

Agency approvals

- EN55022
- EN55024
- EN60950 / CE
- EN 61000-3-2
- EN 61000-3-3
- IEC 950 CB Scheme
- FCC Part 15 Class A, and Class B
- UL 1950
- CSA C22.2 950-95
- VCCI
- NZ AS3548 / C-tick
- RRL for MIC (KCC)
- BSMI
- UL 94-/V

Supported operating systems

The ServeRAID M5016 SAS/SATA Controller supports the following operating systems:

- Microsoft Windows Server 2003, Web Edition
- Microsoft Windows Server 2003/2003 R2, Datacenter Edition
- Microsoft Windows Server 2003/2003 R2, Datacenter x64 Edition
- Microsoft Windows Server 2003/2003 R2, Enterprise Edition
- Microsoft Windows Server 2003/2003 R2, Enterprise x64 Edition
- Microsoft Windows Server 2003/2003 R2, Standard Edition
- Microsoft Windows Server 2003/2003 R2, Standard x64 Edition
- Microsoft Windows Storage Server 2003/2003 R2, Standard Edition
- Microsoft Windows Storage Server 2003/2003 R2, Enterprise Edition x64
- Microsoft Windows Storage Server 2003/2003 R2, Standard Edition x64
- Microsoft Windows Storage Server 2003/2003 R2, Workgroup Edition x64
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Small Business Server 2003/2003 R2 Premium Edition
- Microsoft Windows Small Business Server 2003/2003 R2 Standard Edition
- Red Hat Enterprise Linux 4 AS for x86
- Red Hat Enterprise Linux 4 AS for AMD64/EM64T
- Red Hat Enterprise Linux 4 ES for x86
- Red Hat Enterprise Linux 4 ES for AMD64/EM64T
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server Edition with Xen
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- SUSE LINUX Enterprise Server 10 for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 for x86
- SUSE LINUX Enterprise Server 10 with Xen for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 with Xen for x86
- SUSE LINUX Enterprise Server 11 for AMD64/EM64T
- SUSE LINUX Enterprise Server 11 for x86
- SUSE LINUX Enterprise Server 11 with Xen for AMD64/EM64T
- VMware ESX 4.1
- VMware ESXi 4.1
- VMware vSphere 5.0

See the IBM ServerProven website for the latest information about the specific versions and service packs supported: <http://ibm.com/servers/eserver/serverproven/compat/us/>. Click **System x servers**, then **Disk controllers** to see the support matrix. Click the check mark that is associated with the System x server in question to see the details of the operating system support.

Related publications

For more information see the following documents:

- IBM US Announcement Letter for the ServeRAID M5016 SAS/SATA Controller:
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS111-215>
- IBM US Announcement Letter for the ServeRAID M5016 Battery Tray:
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS112-132>
- System x RAID products home page:
http://www.ibm.com/systems/storage/product/systemx/scsi_raid.html
- IBM ServeRAID software matrix:
<http://www.ibm.com/support/docview.wss?uid=psg1SERV-RAID>
- IBM System x Configuration and Options Guide:
<http://www.ibm.com/support/docview.wss?uid=psg1SCOD-3ZVQ5W>

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